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EXAMINER	
WHISENANT, ETHAN C	
ART UNIT	PAPER NUMBER
1634	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/694,480	WALDER ET AL.	
	Examiner	Art Unit	
	Ethan Whisenant, Ph.D.	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30 and 33-39* is/are rejected.

7)☐ Claim(s) *31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 MAR 04* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Final Action

1. The applicant's response (filed 02 NOV 06) to the Office Action has been entered. Following the entry of the claim amendment(s), **Claim(s) 1-39** is/are pending. Rejections and/or objections not reiterated from the previous office action are hereby withdrawn. The following rejections and/or objections are either newly applied or reiterated. They constitute the complete set presently being applied to the instant application.

CLAIM OBJECTIONS

2. **Claim(s) 26** is /are is objected to for the following minor informality.

Claim26 recites N.sub.1. where it should properly recite N_1. Please correct.

35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that may form the basis for rejections set forth in this Office action:

> A person shall be entitled to a patent unless --
>
> **(a)** the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> **(b)** the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> **(e)** the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
> or
> **(e)** the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

CLAIM REJECTIONS UNDER 35 USC § 102

5. **Claim(s) 1-2, 4-5, 7-8, 14-17, 21-24, 33 and 38-39** is/are rejected under 35 U.S.C. 102(b) as being anticipated by Jenne et al. [WO 99/477044 (23 SEP 99)].

Claim 1 is drawn to nucleic acid comprising : (a) a cleavage domain comprising a single-stranded region, said single-stranded region comprising at least one internucleotide linkage 3' to an adenosine residue, at least one internucleotide linkage 3' to a cytosine residue, at least one internucleotide linkage 3' to a guanosine residue, and at least one internucleotide linkage 3' to a uridine residue, and wherein said cleavage domain does not comprise a deoxyribonuclease-cleavable internucleotide linkage, (b) a fluorescence reporter group on one side of the internucleotide linkages; and (c) a non-fluorescent fluorescence-quenching group on the other side of the internucleotide linkages.

Jenne et al. teach a nucleic acid comprising all of the limitations recited in Claim 1. See US Patent 6,451,535 for a translation of WO 99/47704. Note Column 12, lines 20-24.

Claim 2 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence-quenching group is selected from a defined group which includes a substituted 4-(phenyldiazenyl) phenyl amine compound.

Jenne et al. teach this limitation wherein these authors teach that the acceptor species (i.e. the quencher) is TAMRA = 6-carboxytetramethyl rhodamine. See Column 5 , beginning at about line 40 of US Patent 6,451,535.

Claim 4 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence reporter group is selected from a defined group which includes fluorescein, tetrachlorotluorescein, hexachlorotluorescein, rhodamine, tetramethylrhodamine, a Cy dye, Texas Red, a Bodipy dye, or an Alexa dye.

Jenne et al. teach this limitation wherein these authors teach that their reporter group is FAM = 6-carboxy-fluorescein. See at least for example Column 5, beginning at about line 40 of US Patent 6,451,535.

Claim 5 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence reporter group is attached to the 5'-terminal nucleotide of the nucleic acid.

Jenne et al. teach this limitation. See at least for example Column 12 beginning at about line 20 of US Patent 6,451,535.

Claim 7 is drawn to embodiment of the nucleic acid of Claim 1 which is a single-stranded RNA molecule.

Jenne et al. teach this limitation. See at least for example Column 12 beginning at about line 20 of US Patent 6,451,535.

Claim 8 is drawn to embodiment of the nucleic acid of Claim 1 which is a chimeric oligonucleotide comprising a nuclease resistant modified ribonucleotide residue.

Jenne et al. teach this limitation. See at least for example Column 5 beginning at about line 40 of US Patent 6,451,535 and Column 7 beginning at about line 45.

Claim 14 is drawn to embodiment of the nucleic acid of Claim 1 which comprises a ribonuclease-cleavable modified ribonucleotide residue. **Claim 15** is

drawn to embodiment of the nucleic acid of Claim 14 wherein the ribonuclease-cleavable modified ribonucleotide residue is in the enzymatic cleavage domain.

Jenne et al. teach this limitation. As regards the limitation "modified ribonucleotide residue", any ribonucleotide residue can be said to be "modified".

Claim 16 is drawn to embodiment of the nucleic acid of Claim 1 which is 5-30 nucleotides long. **Claim 17** is drawn to embodiment of the nucleic acid of Claim 16 wherein the nucleic acid is 7-10 nucleotides long.

Jenne et al. teach these limitations. See for example Column 12, lines 20-24 and Column 5, lines 1-10.

Claim 21 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence reporter group is 5' to the enzymatic cleavage domain and the fluorescence quenching group is 3' to the enzymatic cleavage domain. **Claim 22** is drawn to an embodiment of the nucleic acid of Claim 21 wherein the fluorescence reporter group is at the 5' terminus of the nucleic acid. **Claim 23** is drawn to embodiment of the nucleic acid of Claim 21 wherein the fluorescence quenching group is at the 3' terminus of the nucleic acid.

Jenne et al. teach these limitations. See for example Column 12, lines 20-24 and Column 5, lines 1-10.

Claim 33 is drawn to a kit comprising the nucleic acid as recited in Claim1.

Jenne et al. teach a kit comprising all of the limitations recited in Claim 33. See for example Claims 1, 8-9 of US Patent 6,451,535.

Claim 38 is drawn to a method for measuring of a ribonuclease. **Claim 39** is drawn to embodiment of the method of Claim 39 wherein the step for measuring the amount of fluorescence produced is carried out by measuring fluorescence in a fluorimeter.

Jenne et al. teach a method for measuring a ribonuclease comprising all of the limitations recited in Claims 38-39.

35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

CLAIM REJECTIONS UNDER 35 USC § 103

8. **Claim(s) 3, 6, 9-11, 13 and 18-20, 24-29** is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenne et al. [WO 99/477044 (23 SEP 99)].in view of Callaghan et al. [WO 99/05314 (FEB 1999)].

Claim 3 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence-quenching group is selected from a defined group which includes DABCYL i.e. 4-(4'-dimethylaminophenylazo)benzoic acid).

Jenne et al. teach a nucleic acid comprising all of the limitations of Claim 3 except these authors do not teach using DABCYL as the fluorescence-quenching group rather these authors teach using TAMARA as the fluorescence-quenching group. However, as evidenced by at least Callaghan et al. DABCYL was well known prior to the instant invention as was its use as a fluorescence-quenching group in a FRET type assay. See the last two paragraphs on p. 2. Therefore, absent an unexpected result it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use DABCYL as taught by Callaghan et al. in place of the TAMARA taught by Jenne et al. in the nucleic acid substrate molecule of Jenne et al. Please note that substitution of one well known method/reagent with known properties for a second well known method/reagent with well known properties would have been *prima facie* obvious to the ordinary artisan at the time of the invention in the absence of an unexpected result. As regards the motivation to make the substitution recited above, the motivation to combine arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making this obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

Claim 6 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence quenching group is attached to the 5'-terminal nucleotide of the nucleic acid.

Jenne et al. teach a nucleic acid comprising all of the limitations of Claim 6 except these authors do not teach placing the fluorescence-quenching group on the 5'-terminal nucleotide of the nucleic acid of the nucleic acid rather these authors teach placing the fluorescence-quenching group on the 3'-terminal nucleotide of the nucleic acid However, as evidenced by at least Callaghan et al. placement of the reporter and quencher on the nucleic acid can be on either the 5' end and the 3' end " or the 3' end and the 5' end. See for example the last paragraph on p.2 wherein Callaghan et al. teaches: "By way of non-limiting example either species may be attached to the 3'

terminus of the probe via controlled pore glass (CPG) based synthesis or attached to the 5' terminus via 5'-phosphoramidite chemistry. The donor and quencher species are attached at any convenient locations on the probes, such as for example at or near the ends of the probe, preferably at the ends of the probe." Therefore, absent an unexpected result it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to place the fluorescence-quenching group on the 5'-terminal nucleotide of the nucleic acid. Please note that substitution of one well known method/reagent with known properties for a second well known method/reagent with well known properties would have been *prima facie* obvious to the ordinary artisan at the time of the invention in the absence of an unexpected result. As regards the motivation to make the substitution recited above, the motivation to combine arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making this obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

Claim 9 is drawn to embodiment of the nucleic acid of Claim 8 wherein the modified ribonucleotide residue is selected from a defined group which includes a 2'-O-methyl ribonucleotide.

Jenne et al. teach a nucleic acid comprising all of the limitations of Claim 9 except these authors do not explicitly teach using 2'-O-methyl ribonucleotide. However, these authors do teach that their oligonucleotide substrate can comprise 2'- modified ribose units and as evidenced by at least Callaghan et al. 2'-O-methyl ribonucleotides were well known prior to the instant invention. See for example p.4, beginning at line 11 Therefore, absent an unexpected result it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use 2'-O-methyl ribonucleotides in the oligo nucleotide substrate of Jenne et al. in order to increase the stability of the oligo nucleotide substrate of Jenne et al. See Column 7 beginning at about line 45 of US Patent 6,451,535.

Claim 10 is drawn to embodiment of the nucleic acid of Claim 8 wherein the modified ribonucleotide residue is at the 5-terminus or the 3' terminus. **Claim 11** is drawn to embodiment of the nucleic acid of Claim 1 wherein the nucleic acid is a chimeric oligo comprising a deoyxribonuclease resistant modified deoxyribonucleotide residue. **Claim 13** is drawn to embodiment of the nucleic acid of Claim 11 wherein the deoyxribonuclease resistant modified deoxyribonucleotide residue is in the enzymatic cleavage domain.

Jenne et al. teach these limitations wherein these author teach :

> "Thus, in a particularly preferred embodiment, the double labeled substrates are modified RNA oligonucleotides. As long as the cleavage site in the substrate is NUH.↓ (according to the IUB code: N=any base, H=A, U or C), the substrate can contain desoxyribonucleotides or/and modified bases or/and 2'-modified ribose units. In this way, the stability of the substrate in the cell extract is increased (N. Taylor et al., Nucleic Acids Res. 20 (1992), 4559-4565). "

Claim 18 is drawn to embodiment of the nucleic acid of Claim 1 wherein the fluorescence quenching group is 5' to the enzymatic cleavage domain and the reporter group is 3' to the enzymatic cleavage domain.

Jenne et al. teach a nucleic acid comprising all of the limitations of Claim 18 except these authors do not teach placing the fluorescence-quenching group 5' of the enzymatic cleavage domain and the fluorescence-reporter group 3' of the enzymatic cleavage domain, rather these authors teach placing the fluorescence-quenching group 3' of the enzymatic cleavage domain and the fluorescence-reporter group 5' of the enzymatic cleavage domain. However, as evidenced by at least Callaghan et al. the placement of the reporter and quencher on the nucleic acid can be on either the 5' end and the 3' end " or the 3' end and the 5' end. See for example the last paragraph on p.2 wherein Callaghan et al. teaches:

> "By way of non-limiting example either species may be attached to the 3' terminus of the probe via controlled pore glass (CPG) based synthesis or attached to the 5' terminus via 5'-phosphoramidite chemistry. The donor and quencher species are attached at any convenient locations on the probes, such as for example at or near the ends of the probe, preferably at the ends of the probe."

In light of these teachings, and absent an unexpected result it, would have been

prima facie obvious to one of ordinary skill in the art at the time of the invention to place the fluorescence-quenching group on the 5'-terminal nucleotide of the nucleic acid (i.e. 5' of the enzymatic cleavage domain) and the fluorescence-reporter group on the 3'-terminal nucleotide of the nucleic acid (i.e. 3' of the enzymatic cleavage domain). Please note that substitution of one well known method/reagent with known properties for a second well known method/reagent with well known properties would have been *prima facie* obvious to the ordinary artisan at the time of the invention in the absence of an unexpected result. As regards the motivation to make the substitution recited above, the motivation to combine arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making this obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

Claim 19 is drawn to embodiment of the nucleic acid of Claim 18 wherein the fluorescence-quenching group is at the 5' terminus. **Claim 20** is drawn to embodiment of the nucleic acid of Claim 18 wherein the fluorescence-reporter group is at the 3' terminus.

Callaghan et al. teach these limitations.

Claim 24 is drawn to embodiment of the nucleic acid of Claim 1 wherein the enzymatic cleavage domain comprises a particular formula. Admittedly, neither of Jenne et al. or Callaghan et al. explicitly teach the nucleic acids recited in Claims 24-29 However, these references, In the absence of an unexpected result, reasonably suggest the nucleic acid recited in Claims 24-29 for the reasons outline above

9. **Claim(s) 12** is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenne et al. [WO 99/477044 (23 SEP 99)] in view of Callaghan et al. [WO 99/05314 (FEB 1999)] as applied against Claim 112 above and further in view of Arnold , Jr. et al. [US 5,792,615 (1998)].

Claim 12 is drawn to embodiment of the nucleic acid of Claim 11 wherein the deoyxribonuclease resistant modified deoxyribonucleotide residue is selected from a defined group which includes a phosphotriester deoxyribonucleotide, a phosphorothioate deoxyribonucleotide, and a phosphorodithioate deoxyribonucleotide.

Jenne et al. teach a nucleic acid comprising all of the limitations of Claim 12 except these authors do not explicitly teach using the deoxyribonucleotide residues recited. However, these authors do teach that their oligonucleotide substrate can comprise modified dexoyribonucleotides and/ or 2'-modified ribonucleotides. In addition, Arnold , Jr. et al. teach the modified deoxyribonucleotide residues recited. Therefore, absent an unexpected result it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use the deoyxribonuclease resistant modified deoxyribonucleotide residues taught by Arnold , Jr. et al. in the oligo substrate of Jenne et al. Please note that substitution of one well known method/reagent with known properties for a second well known method/reagent with well known properties would have been *prima facie* obvious to the ordinary artisan at the time of the invention in the absence of an unexpected result. As regards the motivation to make the substitution recited above, the motivation to combine arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making this obviousness rejection comes from the M.P.E.P. at 2144.07 and 2144.09.

10. Claim(s) 34-37 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenne et al. [WO 99/477044 (23 SEP 99)] as applied against Claim 33 above and further in view of the Stratagene Catalog.

Claim 34 is drawn to a kit of Claim 33 further comprising in a second container a ribonuclease.

Jenne et al. teach a kit comprising all of the limitations recited in Claim 34 except these authors do not explicitly teach placing the ribonuclease in a second container. However, as evidenced by at least the Stratagene Catalog it was well known at the time of the invention to place "stock solutions" of the reagents needed to perform a molecular biological assay into separate tubes and to then assemble these tubes into a kit format. Therefore, absent an unexpected result it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to modify the kit of Jenne et al. wherein a stock solution comprising the oligonucleotide substrate is placed in one tube and a stock solution of the ribozyme (i.e. ribonuclease) is placed in a second tube. The ordinary artisan would have been motivated to make to modification of the kit recited by Jenne et al. in order to give the end user some flexibility when using the kit of Jenne et al.

Claim 35 is drawn to a kit of Claim 33 further comprising ribonuclease free water.

Admittedly, Jenne et al. do not teach including ribonuclease-free water in their kit. However, the use of ribonuclease-free water as well as the need for such water to make dilutions in experiments involving RNA molecules was well known art the time of the invention. Therefore, absent an unexpected result it would have been *prima facie* obvious to the ordinary artisan at the time of the invention to include ribonuclease-free water in the kit of Jenne et al. The ordinary artisan would have been motivated to make the modification recited above in order to allow the end user to make any required reagent dilutions without the risk of introducing extraneous ribonucleases to the assay.

Claim 36 is drawn to a kit of Claim 33 further comprising a buffer.

This embodiment of the kit would have been *prima facie* obvious to the ordinary artisan at the time of the invention, absent an unexpected result, in that the assay described by Jenne et al. requires buffered solution to perform their assay. Therefore, absent an unexpected result it would have been *prima facie* obvious to the ordinary artisan at the time of the invention to include the necessary buffers in the kit of Jenne et al. such that the end user can perform the assay taught by Jenne et al.

Claim 37 is drawn to a kit of Claim 33 further comprising ribonuclease-free laboratory plasticware.

Admittedly, Jenne et al. do not teach including ribonuclease-free laboratory plasticware in their kit. However, the use of ribonuclease-free laboratory plasticware as well as the need for such laboratory plasticware to carry out experiments involving RNA molecules was well known art the time of the invention. Therefore, absent an unexpected result it would have been *prima facie* obvious to the ordinary artisan at the time of the invention to include ribonuclease-free laboratory plasticware in the kit of Jenne et al. The ordinary artisan would have been motivated to make the modification recited above in order to allow the end user to carry out the assay of Jenne et al. without the risk of introducing extraneous ribonucleases to said assay.

CLAIM OBJECTIONS

11. Claim(s) 30-32 is /are objected to as being dependent upon a rejected base claim, but would appear to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

RESPONSE TO APPLICANT'S AMENDMENT/ ARGUMENTS

12. Applicant's arguments with respect to the claimed invention have been fully and carefully considered but are moot in view of the new ground(s) of rejection.

CONCLUSION

13. **Claim(s) 1-39** is/are rejected and/or objected to for the reason(s) set forth above.

14. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ethan Whisenant, Ph.D. whose telephone number is (571) 272-0754. The examiner can normally be reached Monday-Friday from 8:30AM - 5:30PM EST or any time via voice mail. If repeated attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached at (571) 272-0735.

The Central Fax number for the USPTO is (571) 273-8300. Please note that the faxing of papers must conform with the Notice to Comply published in the Official Gazette, 1096 OG 30 (November 15, 1989).

ETHAN WHISENANT
PRIMARY EXAMINER

Art Unit 1634